AMENDMENTS TO THE CLAIMS:

Claims 1-40 (Cancelled).

41. (Previously Presented): An osteoimplant in the form of a flexible sheet comprising a coherent mass of elongate bone-derived particles possessing a void volume of not greater than about 32%.

42. (Previously Presented): The osteoimplant of Claim 41 containing no appreciable quantity of binder.

43. (Previously Presented): The osteoimplant of Claim 41 further comprising a plasticizer.

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44. (Previously Presented): The osteoimplant of Claim 42 further comprising a plasticizer.

45. (Previously Presented): The osteoimplant of Claim 41 having a density of greater than about 0.8 g/cm^3.

46. (Previously Presented): The osteoimplant of Claim 42 having a density of greater than about 0.8 g/cm^3.

47. (Previously Presented): The osteoimplant of Claim 41 further comprising a binder.

48. (Previously Presented): The osteoimplant of Claim 47 wherein the binder is a bioabsorbable polymeric binder.

49. (Currently Amended): The osteoimplant of Claim 41 wherein at least about 60 weight percent of the elongate bone particles possess a median length of from about 2 to about 200 mm, a medium thickness of from about 0.05 to about 2

mm and a median width of from about 1 mm to about 20 mm wherein the chosen median length is greater than the chosen median width.

50. (Previously Presented) The osteoimplant of Claim 41 wherein at least about 60 weight percent of the elongate bone particles possess a median length of from about 10 to about 100 mm, a median thickness of from about 0.2 to about 1 mm and a median width of from about 2 to about 5 mm.

51. (Previously Presented) The osteoimplant of Claim 41 wherein at least about 60 weight percent of the elongate bone particles possess a median length to median thickness ratio of from about 50:1 to about 500:1, a median length to median width ratio of from about 10:1 to about 200:1.

52. (Previously Presented) The osteoimplant of Claim 41 wherein at least about 60 weight percent of the elongate bone particles possess a median length to median thickness ratio of from about 50:1 to about 100:1, a median length to median width ratio of from about 50:1 to about 100:1.

53. (Previously Presented) The osteoimplant of Claim 42 wherein at least about 60 weight percent of the elongate bone particles possess a median length to median thickness ratio of from about 50:1 to about 500:1, a median length to median width ratio of from about 10:1 to about 200:1.

54. (Previously Presented) The osteoimplant of Claim 43 wherein at least about 60 weight percent of the elongate bone particles possess a median length to median thickness ratio

of from about 50:1 to about 100:1, a median length to median width ratio of from about 50:1 to about 100:1.

55. (Previously Presented) The osteoimplant of Claim 41 wherein elongate bone particles mechanically adhere to each other.

56. (Previously Presented) The osteoimplant of Claim 41 wherein elongate bone particles mechanically adhere to each other by entanglement.

57. (Previously Presented) The osteoimplant of Claim 41 wherein the elongate bone particles are selected from the group consisting of nondemineralized bone particles, demineralized bone particles and mixtures thereof.

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58. (Previously Presented) The osteoimplant of Claim 41 additionally containing bone powder.

59. (Previously Presented) The osteoimplant of Claim 58 wherein the bone powder is selected from the group consisting of nondemineralized bone powder and demineralized bone powder.

60. (Previously Presented) The osteoimplant of Claim 41 wherein the elongate bone particles are obtained from cortical, cancellous or cortico-cancellous bone of autogenic, allogenic, xenogenic or transgenic origin.

61. (Currently amended): The osteoimplant of Claim 57 containing a mixture of nondemineralized elongate bone particles and demineralized elongate bone particles in a weight ratio of from about greater than 0:1 to about 1:greater than 0.

62. (Currently amended): The osteoimplant of Claim 58 containing elongate bone particles and bone powder in a weight ratio of from about 1:greater than 0 to about 1:4.

63. (Previously presented): The osteoimplant of Claim 41 wherein the coherent mass is mechanically shaped to a specific three-dimensional architecture.

64. (Previously presented): The osteoimplant of Claim 41 shaped as a sheet, plate, disk, tunnel, cone or tube.

65. (Currently amended): The osteoimplant of Claim 41 shaped as a crescent apron for single site use, an I-shape to be placed between teeth for intra bony defects, a rectangular bib for defects involving both the buccal and lingual alveolar ridges, a neutralization plate, a reconstructive plate, a buttress plate, a T-buttress plate, a spoon plate, a clover leaf plate, a condylar plate, a compression plate, a bridge plate, ~~a wave plate,~~ a concave countered plate~~, a bowl shaped plate or a defect shaped plate~~.

66. (Previously presented): The osteoimplant of Claim 41 in laminate form.

67. (Previously presented): The osteoimplant of Claim 41 configured for the repair of a simple fracture, compound fracture or non-union; as an external fixation device or internal fixation device; for joint reconstruction, arthrodesis, arthroplasty or cup arthroplasty of the hip; for femoral or humeral head replacement; for femoral head surface replacement or total joint replacement; for repair of the vertebral column, spinal fusion or internal vertebral fixation; for tumor surgery; for deficit filling; for discectomy; for laminectomy; for excision of spinal cord tumors; for an anterior cervical or thoracic operation; for the repairs of a spinal injury; for scoliosis, for lordosis or kyphosis treatment; for intermaxillary fixation of a fracture; for mentoplasty; for temporomandibular joint replacement; for alveolar ridge augmentation and reconstruction; as an inlay osteoimplant; for implant placement

and revision; for sinus lift; for a cosmetic procedure; and, for the repair or replacement of the ethmoid, frontal, nasal, occipital, parietal, temporal, mandible, maxilla, zygomatic, cervical vertebra, thoracic vertebra, lumbar vertebra, sacrum, rib, sternum, clavicle, scapula, humerus, radius, ulna, carpal bones, metacarpal bones, phalanges, ilium, ischium, pubis, femur, tibia, fibula, patella, calcaneus, tarsal bones or metatarsal bones.

68. (Previously presented): The osteoimplant of Claim 41 further comprising at least one zone of impermeability to soft tissue ingrowth wherein said zone is integral with the osteoimplant.

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69. (Previously presented): The osteoimplant of Claim 41 further comprising a biocompatible component selected from the group consisting of biocompatible fluid carrier, filler, fiber, mesh, substance providing radiopacity, biostatic/biocidal agent, surface active agent and bioactive substance.

70. (Previously presented): An osteoimplant in the form of a flexible sheet comprising a coherent mass of elongate bone-derived particles, the sheet having a thickness of from about 50 to about 2000 microns.

71. (Previously presented): The osteoimplant of Claim 70 containing no appreciable quantity of binder.

72. (Previously presented): The osteoimplant of Claim 70 further comprising a plasticizer.

73. (Previously presented): The osteoimplant of Claim 70 having a density of greater than 0.8 g/cm^3.

74. (Previously presented): The osteoimplant of Claim 71 further comprising a plasticizer.

75. (Previously presented): The osteoimplant of Claim 71 having a density of greater than 0.8 g/cm^3.

76. (Previously presented): The osteoimplant of Claim 70 further comprising a biocompatible component selected from the group consisting of biocompatible fluid carrier, filler, fiber, mesh, substance providing radiopacity, biostatic/biocidal agent, surface active agent and bioactive substance.

77. (Previously presented): An osteoimplant comprising a coherent mass of elongate bone-derived particles and a binder, said mass possessing a void volume of not greater than about 32%.

78. (Previously presented): The osteoimplant of Claim 77 wherein the binder is a bioabsorbable polymeric binder.

79. (Previously presented): The osteoimplant of Claim 77 wherein the elongate bone-derived particles mechanically adhere to each other.

80. (Previously presented): The osteoimplant of Claim 77 wherein the elongate bone-derived particles mechanically adhere to each other by entanglement.

81. (Previously presented): The osteoimplant of Claim 77 wherein the elongate bone-derived particles are selected from the group consisting of nondemineralized bone particles, demineralized bone particles and mixtures thereof.

82. (Currently amended): The osteoimplant of Claim ~~81~~ 78 wherein the elongate bone-derived particles are selected from the group consisting of nondemineralized bone particles, demineralized bone particles and mixtures thereof.

83. (Currently amended): The osteoimplant of Claim ~~82~~ 79 wherein the elongate bone-derived particles are selected from the group consisting of nondemineralized bone particles, demineralized bone particles and mixtures thereof.

84. (Previously presented) The osteoimplant of Claim 77 further comprising a biocompatible component selected from the group consisting of biocompatible fluid carrier, filler, fiber, mesh, substance providing radiopacity, plasticizer, biostatic/biocidal agent, surface active agent and bioactive substance.